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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/256,346	02/24/1999	KEN-ICHI TAKATORI	Q053397	9700

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EXAMINER

NELSON, ALECIA DIANE

ART UNIT

PAPER NUMBER

2675

DATE MAILED: 06/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/256,346

Applicant(s)
Takatori et al.

Examiner
Alecia Nelson

Art Unit
2675



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Mar 27, 2002
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

2. ***Claims 1, 8, 10, 11, and 16-19*** are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. (U.S. Patent No. 4,800,382) in view of the Applicant's admittance of prior art (FIG. 7).

Okada et al. teaches a driving method for a liquid crystal device of the type comprising a matrix electrode structure having scanning lines and data lines. In the driving method, in a first period, a scanning selection signal is applied to a scanning line and an information signal is applied to a data line in synchronism with the scanning selection signal, and in a second period an

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alternating auxiliary signal is applied to the data line (see abstract). It is also taught, with reference to figure 6, that all or a part of the picture elements on the whole picture written in the previous field or frame is erased at the same time and then successively written (see column 5, lines 59-63). With further reference to **claims 16-19**, scanning odd-numbered scan lines in a first frame and scanning even-numbered scan lines in the next frame is well known in the conventional art.

Okada et al. fails to specifically teach that the scan lines are successively scanned in a second field in an order reverse to that in the first field or writing data a plurality of times to each of the scan lines.

The Applicant's admittance of prior art, with reference to Figure 7, teaches that in each frame there is a positive data voltage period and a negative data voltage frame. There is also that writing is performed for each scan line at timing as shown in Figure 7, an operation of successively writing positive data from the top line is repeated four times, and then an operation of successively writing negative data from the top line is repeated four times (see specification page 11, lines 20-25).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to include the that which is taught by the applicant's admittance of prior art and Okada et al. to thereby provide a driving method for a liquid crystal device having improved display and driving characteristics .

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3. **Claims 2 and 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. and Applicant's admittance of prior art as applied to **claim 1** above, and further in view of Kurematsu (U.S. Patent No. 5,796,380).

With reference to **claims 2 and 8**, Okada et al. and the referenced prior art fails to teach that the first and second fields constitute one frame in interlace drive.

Kurematsu teaches a FLC panel drive system in which pixels constituting odd field and the even fields are independently driven in an interlace mode in which a nondisplay field period is used as a resetting period (see column 2, lines 38-44).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to combine the interlace driving mode as taught by Kurematsu to the drive method as taught by the referenced prior art to thereby provide a method to eliminate interference of impurity with a write operation when the FLC panel is driven in an interlace mode.

4. **Claims 3-5 and 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. and Applicant's admittance of prior art as applied to **claim 1** above, and further in view of Bonnett et al. and Kurematsu (U.S. Patent No. 5,796,380).

With reference to **claims 3-5, and 8**, Okada et al. and the referenced prior art teach all that is required as explained above with reference to claim 1 above, however fails to specifically teach two write periods as well as two reset periods. teaches that there is provide two write periods as well as two reset periods for each scan line (see column 3, lines 57-column 4, line 17).

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Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to combine the interlace driving mode as taught by Kurematsu to the drive method as taught by the referenced prior art to thereby provide a method to eliminate interference of impurity and thereby provide a clearer displayed image.

5. **Claims 6 and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. and the referenced prior art as applied to **claim 1** above, and further in view of Kurematsu and Kamiya et al (U.S. Patent No. 4,694,348).

Okada et al., Applicant's admittance of prior art and Kurematsu teach all that is required as explained above, however fail to teach that data corresponding to the three colors are successively displayed.

Kamiya et al. teaches a method of driving a liquid crystal display panel whereby each set of six scanning lines consisting of three successive lines of one field and three corresponding lines of the succeeding field. Three lines are displayed by display elements driven by one scanning electrode and the remaining three lines by display elements are driven by an immediately adjacent scanning electrode (see column 10, lines 3-19). It is further taught that this driving method is applicable to black-and-white television displays and to color displays (see column 10, lines 20-24).

Therefore it would have been obvious to one having ordinary skill in the art to combine the method of driving three successive lines of color, as taught by Kamiya et al. to the driving

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method as taught by the referenced prior art and Kurematsu to thereby provide a drive method that is applicable to drive a color display.

6. *Claims 7, 9, and 12-15* are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. and the referenced prior art as applied to **claims 1, 10, or 11** above, and further in view of Kamiya et al.

The cited references teach all that is required as explained above, however fail to teach that data corresponding to the three colors are successively displayed.

Kamiya et al. teaches a method of driving a liquid crystal display panel whereby each set of six scanning lines consisting of three successive lines of one field and three corresponding lines of the succeeding field. Three lines are displayed by display elements driven by one scanning electrode and the remaining three lines by display elements are driven by an immediately adjacent scanning electrode (see column 10, lines 3-19). It is further taught that this driving method is applicable to black-and-white television displays and to color displays (see column 10, lines 20-24).

Therefore it would have been obvious to one having ordinary skill at the time of the invention to divide the scan lines into a plurality of blocks, as taught by Kamiya et al., and simultaneously drive the plurality of blocks with the drive and reset method taught by Okada et al. and the reference prior art to thereby provide that the resolution of a display be less visible of flicker to the eye of an observer.

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Response to Arguments

7. Applicant's arguments filed 3/27/02 have been fully considered but they are not persuasive. Applicant argues that the applied art fails to teach or suggest scanning successively the scan lines in a second field of a frame of for display in an order reverse to that in the first field as recited in **claim 1**. However, as claimed an the change in polarity from the first field to the second field, as taught by the admitted prior art, could be read as an "order reverse". Therefore the admitted prior art does teach scanning successively the scan lines in a second field of a frame in an order reverse to that in the first field. It is also argued, with reference to claim 10, that the applied art fails to teach or suggest writing data a plurality of times to each of the scan lines. However, the applicant states that while data is written **four times in each scan line** in the positive and negative data voltage periods, data is only written **once in each scan line** in each of the four fields of the positive and negative data voltage periods. Therefore data is written four times in each scan line, and the admitted prior art does teach writing data a plurality of times to each of the scan lines.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any response to this action should be mailed to: Commissioner of Patents and Trademarks Washington, D.C. 2023; or faxed to: (703) 308-9051, (for formal communications intended for entry) or: (703) 308-6606 (for informal or draft communications, please label "PROPOSED" or "DRAFT"). Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alecia D. Nelson whose telephone number is (703)305-0143 between the hours of 8:00 a.m and 5:00 p.m. on Monday-Friday.

If attempts to reach the above examiner by telephone are unsuccessful, the examiner's supervisor, Steve Saras, can be reached at (703)305-9720.

and/AND
June 3, 2002


DENNIS-DOON CHOW
PRIMARY EXAMINER